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ABSTRACT

One of a series of studies on the development of technical and vocational education in the member states of UNESCO, this report profiles the educational system in Pakistan. The seven parts of the document provide information about the following: educational and public policy; levels of technical and vocational education; training modes and systems; industrial needs and labor demands; women in technical education; the current status of technical and vocational education; and current national level technical and vocational education projects. Appendixes provide statistical information about vocational and technical programs and schools. Some of the highlights are as follows: (1) approximately 49 percent of primary-age children and 16 percent of secondary-age students attend school; (2) education in Pakistan is a provincial responsibility but general policy, planning and overall guidelines, curricula, textbooks, and educational standards are set at the federal level; (3) the government recommends changes in the educational system to achieve 100 percent literacy, to introduce high-technology disciplines, and to develop human resources to meet future labor needs; (4) although technical education and vocational training have increased in the last 30 years, more higher-quality facilities are needed; (5) 35 polytechnics and 14 colleges of engineering offer a 3-year postsecondary course in associate engineering; and (6) technical education and training of technicians is considered crucial to labor force development in order to achieve the socioeconomic goals of Pakistan's developing economy. (KC)

ED 399 377

NATIONAL PROFILES IN TECHNICAL AND VOCATIONAL EDUCATION IN ASIA AND THE PACIFIC

Pakistan

UNEVOC
International Project on Technical and Vocational Education

U.S. DEPARTMENT OF EDUCATION
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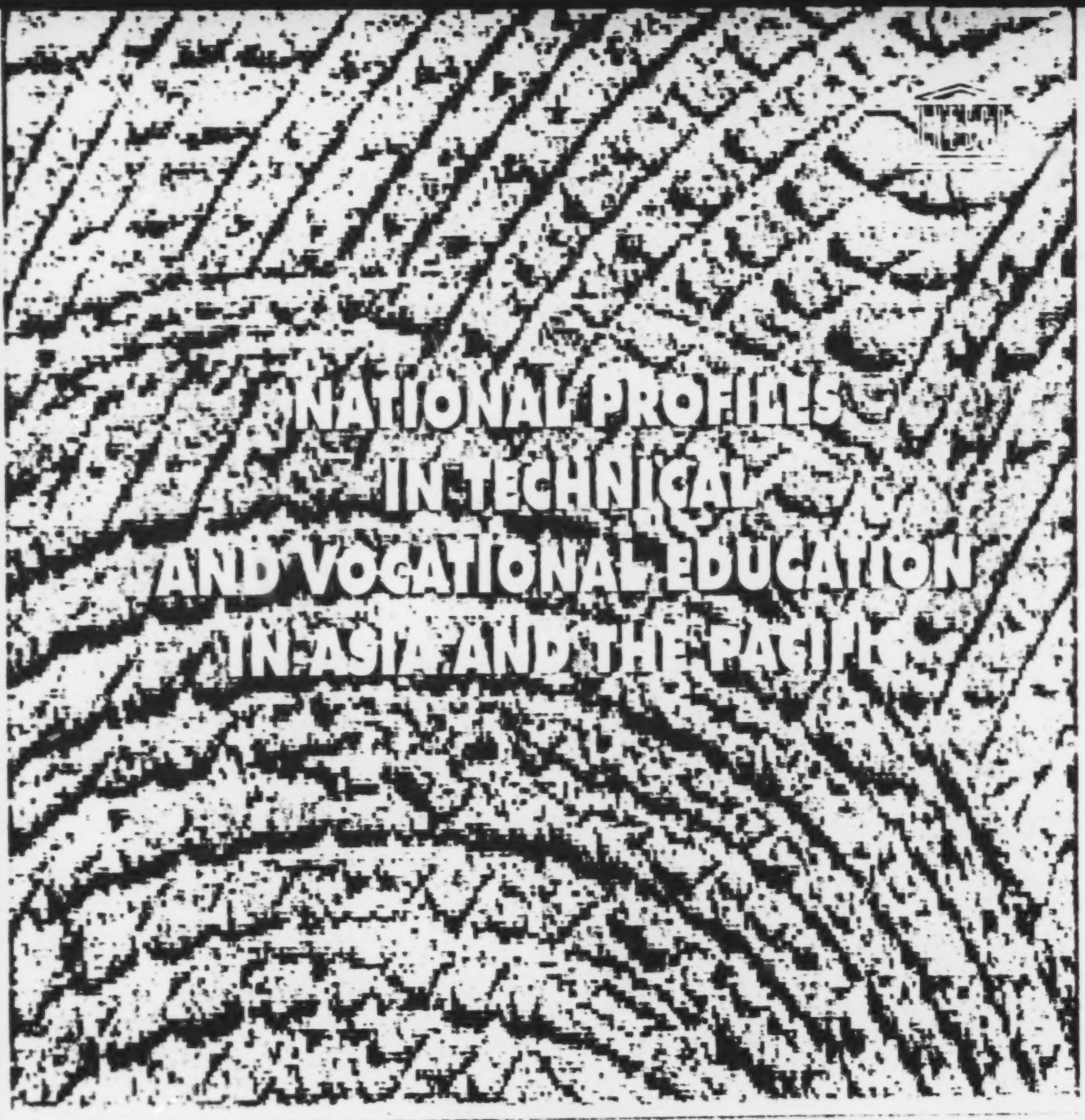

Pakistan

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This volume is one of a series of member country profiles on Technical and Vocational Education of the following member countries:

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BHUTAN
PEOPLE'S REPUBLIC OF CHINA
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FOREWORD

Technical and vocational education has always been an important component of UNESCO's consecutive Medium Term Plans. The basic objective of this programme is to support the efforts of Member States to link education systems more closely to the world of work and to promote the expansion and improvement of technical and vocational education in the light of changing employment needs.

The Colombo Plan Staff College for Technician Education (CPSC) also dedicates itself primarily to enhancing the growth and development of the technician education systems in its member countries which are located in the Asia and Pacific region. Its programmes, projects, and activities are geared to provide the needed impetus for the professional development of senior level personnel involved in technician education development efforts.

UNESCO has launched an International Project on Technical and Vocational Education (UNEVOC) as of 1992 in co-operation with the Government of Germany, ILO, FAO, UNDP and NGOs interested in the reform of technical and vocational education. This project focuses on exchanging information, research and experiences on policy and programme issues in technical and vocational through a network of co-operating institutions

In a spirit of co-operation UNESCO and CPSC, under UNEVOC, an attempt is being made to compile and publish studies on the development of technical and vocational education in Member States in the form of TVE profiles of 21 countries. It is hoped that this series will serve as a handy reference information on TVE systems, staff development, technical co-operation and information networking. These studies have been possible because of the full co-operation to UNESCO PROAP and CPSC by all concerned in the Member States.

The opinion expressed in this study are those of the authors and do not necessarily reflect the position of UNESCO and CPSC in this regard. This profile on Islamic Republic of Pakistan was prepared by Dr. Pichit Punsri, Seconded Faculty Member to CPSC by the Government of Thailand.

C.K. Basu
Director, CPSC

Victor Ordonez
Director, UNESCO PROAP

Part I

POLICY CONCERN

1.1 Introduction

Pakistan became an independent country in 1947 and was established as an Islamic state. Its population is more than 100 million with an area of 796,095 square miles. Pakistan is located between 23 and 37 degree North Latitude and 67 and 76 degree East Longitude. It is divided into four provinces; Punjab, Sind, North West Frontier Province (NWFP) and Baluchistan; and federally administered areas. There are twenty Divisions, eighty-seven Districts, 320 Tehsils/Talukas, 3,996 Union Councils and 43,963 villages in the country.

Climatically, Pakistan enjoys a considerable measure of variety. Northern and western part of the country are extremely cold in the winter and have pleasant summer. The vast plains of the Indus river valley are extremely hot in summer with a cold and dry weather in winter. The coastal strip in the south has a temperate climate. There is a general deficiency of rainfall. It ranges from 16 to 120 centimeters. Rains are monsonic in origin and fall late in summer.

Pakistan is predominantly an agricultural country and about 80 per cent of its population depends on agriculture for their livelihood. About 20–30 per cent population lives in urban area. So agriculture plays an important role in socio-economic development of the country and is the largest sector in the economy, accounting for 26 per cent GDP and employing 54 per cent of labour force with a share of export earnings to the tune of 79 per cent. Population growth rate per annum is 3.1 per cent where as the population is estimated at 108 million (1989).

Pakistan has a network of canals irrigating a major part of its cultivated land. Wheat, cotton, rice and sugarcane are the major crops while mangoes, oranges, bananas and apples are the fruits grown in abundance.

The participation rate of primary school going children is 49 per cent and of secondary education is only 16 per cent. Participation rate for females in rural areas is much below national norms. The literacy rate is 26.0 per cent.

According to the constitution of Pakistan, education is on the concurrent list. Thus, education in Pakistan is essentially a provincial responsibility but general policy, planning and over-all guidelines including curricula, textbooks and educational standards are set at the federal level. It deals with the curricula for all grades including curricula of technical and vocational education. Furthermore, in accordance with the Curriculum Act of 1976, there is a system of central curriculum for all the polytechnics and vocational institutes. In 1962, an Apprenticeship Ordinance was enforced in the country to enhance the strength of skilled manpower. This placed an obligation on the industrial units to accept a limited number of apprentices for a specified course/period. Subsequently, the National Training

Board Ordinance 1980, resulted in the establishment of a National Training Board. This Ordinance (1980) provides for the placement of fresh graduates/passouts for industrial training within the country. The Board extended its activity in expanding the vocational education through the labour department at provincial level and Manpower Division at the Federal level.

Both of these Ordinances (1962, 1980) helped in the development of vocational education and in reinforcing practicality among the skilled youth both by government agencies and non-governmental organizations (NGOs). At provincial level, technical and vocational education is looked after by the Directorates of Technical Education, one in each province, whereas evaluation and certification is done by Boards of Technical Education in the provinces.

The formal education system consists of five years of primary education (Classes 1–5), five years of secondary education (Classes 6–10), and two years of higher secondary education. Secondary education is sub-divided into middle schools (Classes 6–8) and high schools (Classes 9–10). The intermediate college is usually part of a degree college that takes students up to B.A./B. Sc. level which is two years beyond Class 12. Universities offer post degree and research programmes.

1.2 Educational Development Plan

A. National Education Policy*

a) Problems in the Education System

The government in its draft National Educational Policy (1992) notes that, despite a ten-fold increase in educational facilities since 1947, the lack of adequate financial resources, inadequate delivery system and population growth have nullified the many advances made in the past. Participation rates at all levels are low and the progress towards universal primary education has been slow. The quality of education in the public sector continues to deteriorate; curricula remain outdated and irrelevant to the needs of society; vocationalization of education has not been successful while TEVT has not ensured equitable access to these opportunities.

All these have had a dampening effect on the social and economic development of the country. Conscious of the deficiencies in the education system, the government has revised the education policy and the new (draft) policy aims, among other things, to meet the challenges of the 21st century and to improve the efficiency, effectiveness and equity of the education system.

* Source: Draft National Education Policy of the MOE, Government of Pakistan, Islamabad, the ADB, Manila, Philippines, June 1992.

b) Conceptual Framework of the National Education Policy

The conceptual framework of the proposed National Education Policy is based on a number of basic concepts. These which are given in the NEP are given below. In a predominantly Muslim nation the education system would focus on the inculcation of Islamic values to build an Islamic, social, political, economic and ethical order in the context of new scientific and technological advancements.

The aim of education is to develop and sustain a sizable proportion of an educated and informed citizenry to help build better social and health services and a better environment through the elimination of illiteracy, poverty, diseases and unemployment.

In the provision of education, the principles of equity, quality and efficiency will continue to be emphasized. Basic education , will therefore, be pursued not merely as a sectoral target, but as an integral part of human development to ultimately eliminate disparities. Efforts to increase the low rates of literacy and primary participation in the country will be given a high priority in educational development. The almost prohibitive costs of addressing these deficiencies, however, require the need to attract private participation in the provision of literacy programmes.

As urban-rural disparities continue to widen, especially in the access to institutions of quality and vocational training institutions, which can provide large rural educational opportunities the NEP proposes the establishment of more vocational and general high schools in rural areas.

Social and economic factors inhibit the development of women education. Innovative resources are, therefore, proposed to increase women participation. These include the expansion of access into general and vocational education, use of new technology in non-formal education, provision of financial incentives and publicity campaigns through print and broadcast media and distance education modes.

The NEP proposes to assign provincial and local governments a greater responsibility for the development of education with the federal government retaining the role of policy co-ordinator and caretaker and providing competitive grants for innovative programmes.

Secondary general education, as it is presently structured, does not prepare students for the world of work nor for the varying needs of expanding agricultural and industrial sectors. It is also unable to absorb the demands posed by science and technology, computer technology and environmental education. Accordingly, the NEP proposes the establishment of two parallel high school streams – the academic high school and the vocational high school offering vocational courses in agriculture, technical, commerce and biomedical areas. At the same time, classes XI and XII, presently housed in colleges, will be shifted to academic and vocational high schools.

The NEP recognizes the dilemma of choosing between the need to increase basic education opportunities and to maintain quality of education. The Policy proposes a practical and realistic approach to this problem by allowing a pragmatically targeted flow of students into the school system and by sustaining quality through an efficient and effective education system.

The role and value of higher education in economic development are being nullified. The higher education system (with deteriorating facilities, inadequate resources, low graduate employment, student indiscipline, low research output and the growing demand for university education), has become very inefficient both internally and externally. The NEP, therefore, proposes several measures to address the problems. Among them are: increasing the efficiency of higher education, strengthening existing graduate programmes, improving delivery systems, ex-panding capabilities of the universities to increase knowledge, and enhancing the entrepreneurial role of the universities.

Campus life will be improved and university discipline enforced to ensure that students and the nation benefit from higher education. Parameters to improve the corporate life of students on campuses will be prescribed; campuses will be depoliticized, and students' conduct and behavior regulated according to the norm of a university culture.

The NEP recognizes the critical role that teachers play in the development of education at all levels and the need to equip and motivate teachers, as reforms are introduced to widen the education base, improve curricula and evaluation. Accordingly, a system of rewards, incentives, career opportunities, training facilities and increased status will be introduced. At the same time, the accountability of teachers will be enforced through performance evaluation.

The present malpractices in examination will be addressed. These have reduced the credibility of the evaluation system. Real learning and achievement have not improved skills and qualifications and this is eroding the intellectual strength and competencies of a nation. The NEP proposes reforms in the existing evaluation system. It identifies new means of regulating the evaluation system. It also suggests new means of regulating access to higher education through a National Testing Service.

To overcome the problems of unemployment, the NEP proposes measures to transform the education system from being supply-oriented to demand-oriented. To this end, manpower planning will be carried out. At the same time, to provide employment opportunities and reduce overcrowding in higher education institutions, a system of horizontal exits of graduates to the job market at various education levels will be introduced.

Substantial reforms in the curricula are proposed at all levels. The curricula revised in the 50's are outdated and irrelevant in the modern context. The reforms suggested include the start of a new cycle for curriculum development at all levels with cognitive compatibility between one level and another, flexibility in the choice and use of textbooks and the production of textbooks by the private sector.

While demand for and, consequently, expenditure on education is increasing, the corresponding public funds are not readily available. The NEP advocates alternative sources of funds for financing public education especially higher education which is capital intensive and heavily subsidized. Some of the measures proposed include the increase in fees, recovery of user charges, increased allocation from the Iqra fund, improving the efficiency of institutions and attracting private financing.

In order to reduce the burden of the public financing of education, incentives will be designed to attract private financing and support private enterprise in education. Provincial and Federal Education Foundations will be established to support the private sector at all levels of education.

Finally, the NEP recommends several innovative approaches to educational development. Among these are the following:

i. achieving a 100 per cent literacy rate in selected districts;

ii. opening non-formal education by non-governmental organizations;

iii. involving institutions of higher education in crash training programmes for science teachers; introducing computer education at all levels of education and in all educational management and teacher training programmes;

iv. introducing incentives based on performance evaluation of teachers;

v. merging secondary and higher secondary levels into the school system; setting up separate academic and vocational higher secondary schools;

vi. using general schools as technical schools in the evenings to cater for drop-outs of general education; encouraging progressive privatization of public sector; introducing education cadre for teachers at par with other services; setting up an Institute of Education Technology for preparing and producing educational materials for dissemination through a second national television channel; and,

vii. introducing high technology disciplines in selected polytechnics and engineering universities and science disciplines in selected general universities; institutionalizing manpower planning for education management system for proper planning and manpower development.

c) Development of Human Resource

The NEP regards the gainful employment of educated manpower as an important aspect of the overall development of the society but the type of general education imparted to the bulk of the youth is considered to be not suitable for the job market of the future because of the changing pattern of economic activity. For this reason, the government feels that changes in curricula are needed to make them compatible with market needs. Manpower supply would be related to appropriate manpower forecasting, that is, the type of work force required and the

type and level of skills in which proficiency is to be achieved. This process has not been institutionalized and the NEP recommends that to achieve balance between manpower requirements and supply, an institutionalized framework for manpower planning be set up. The Academy of Educational Planning and Management and the Manpower Institute will work closely together for manpower planning and labour market research.

Existing data indicate an unemployment rate of 4 per cent. Half of unemployed are illiterate. The remaining half are literate with qualifications. About 64,000 have completed secondary education but less than degree qualifications and 35,000 with degree plus post-graduate qualifications. The ratio of unemployment is more in the rural areas than in the urban areas. Unemployment is likely to rise to 300,000. In the absence of any reliable data on manpower forecasting and the development of job market, it is essential that education is oriented towards the employability of the youth.

Changes will be introduced to enable the young to be employed and contribute to the development of the country through changes in the curricula. School education will be further vocationalized to improve skill acquisition by the work force according to market needs. Semi-literate and school drop-outs will be given the opportunity of upgrading their skills through functional literacy and through distance education in the non-formal sector programmes. New inputs will be made to expand facilities of technical and vocational education of the rural youth.

In the rural areas, mobile training workshops will be established. Vocationalization of secondary education will take the form of accelerated practical training for entry of drop-outs into the labour market. Vocationalization of secondary education will go beyond the traditional industrial occupations and include the fields of social services, medicine, computers, tissue culture, laser technology, etc. to prepare manpower for high technology generation and transfer to the next decade and early 21st century. Social sciences and linguistics will receive due emphasis. Employability in these areas will be increased both in private and public sectors. New occupations in the modern sectors of urban areas and non-farm occupations in the rural areas will be identified and developed to provide gainful employment to women.

Greater emphasis will be paid to non-formal education and training in as much wide a range of skills as possible. This will ensure opportunities to develop skills of women without the need to attend highly structured institution-based programme. Technical Education Boards will make arrangements to offer certification for these non-formal courses. Existing technical and vocational institutions will be renovated; non-vocational institutions will be opened and there will be at least one such institutions in a town of a sizable population. A national network of male and female vocational training centres and vocational high schools will be set up to make up for the existing vacuum.

Guidance and counseling will be provided at the secondary level to shift a bulk of appropriate clientele into vocational and polytechnic education. Apart from massive in-school and out-of-school vocational training programmes, efforts will also be commissioned to train high level scientists and technologists.

B. TEVT Policy

Policies and Strategies of Technical Education and Vocational Training*

During the last thirty years, the increase in the number of technical and vocational institutions has been accompanied by a sizeable growth of TEVT and agro-technical education in various regions of the country. However, the growth has not been in line with the needs of job markets. Training of semi-literate drop-outs remains a problem. New possibilities are needed to improve the status and career opportunities of technicians. A demand-oriented TEVT system and the reinforcement of general education with vocational subjects are attempts towards vocationalization of education. The introduction of vocational high schools will assist in addressing some of the problems.

The number of TEVT institutions will be increased and facilities for technical and vocational education will be made available at tehsil levels in accordance with the needs of the areas. The private sector will be invited to set up TEVT institutions and incentives will be provided for this purpose through Provincial and Federal Education Foundations. The status and career opportunities of technicians will be improved. Curricula will be kept under constant review to ensure that changes in technology and newly emerging technologies are accommodated. A network of technical teacher training institutes will be established, one each province, and linked to the National Technical Teacher Training College. A large number of trade schools will be developed in rural area, using general middle and secondary schools in the evenings. One vocational subject will be made a compulsory component of general education. More opportunities will be provided for the technical education and vocational training of women.

Access to TEVT will be increased through an equitable spatial distribution of educational facilities. The number of quality institutions (model school) will be increased and evenly dispersed. The participation of rural females and males will be ensured through the provision of a large number of scholarships at all levels of education. As far as possible, education for rural development through formal and non-formal sectors will be used for equipping the rural population with employable skills which could increase social mobility and lifelong learning.

* **Source:** (The MOE, Government of Pakistan, Islamabad and The Asia Development Bank, Manila, Philippines: June, 1992).

Part II

LEVELS OF TECHNICAL AND VOCATIONAL EDUCATION

At various points in the educational ladder, student can enter technical/ vocational institutions and teacher training institutions in the specialized field. Technical, vocational education and training in Pakistan can be categorized in the following forms:

A. Pre-vocational (School Level)

Being offered as Agro-technical scheme of studies at Middle and Secondary level with an aim of providing technical orientation or awareness of the work to general education system. Subjects offered at classes 6 to 8 are industrial arts for urban schools (wood work, metal work and electricity), agriculture for boys rural schools and home economics for girls. In addition, certain vocational subjects are also offered under this scheme at classes IX – X. The scheme was introduced on experimental basis in 1976-77 in pursuance of the Educational Policy (1972-80). The Agro-tech scheme is being offered in 4,829 middle and high schools all over the country. The scheme, however, could not yield desired results due to the following reasons:

- shortage of technical teachers;
- lack of physical facilities required for the implementation of the scheme;
- lack of administrative infrastructure for the implementation of the scheme;
- non-examinable status of agro-technical subjects; and,
- lack of interaction between the institutions and the community.

B. Vocational Education

Skill level education/training is being offered in a variety of trades by institutions in public and private sectors. These are being looked after simultaneously by Provincial Education Departments, Labor and Manpower Division, Women Division, Agency for Barani Areas Development (ABAD), Non-government organizations (NGOs) etc. along with privately owned similar institutions. The annual output is approximately 13,500 skilled workers from the existing 235 government vocational institutions, both male and female.

C. Commercial Education

Commercial education is provided by 158 government commercial training institutes throughout the country with an annual output of 7,800. These institutes offer Certificate in Commerce (C. Com) and Diploma in Commerce (D. Com.) courses of one and two years duration respectively, after ten years of schooling with emphasis on secretarial work like bookkeeping, shorthand, typing, accountancy, etc. These commercial institutions follow curricula approved by the Federal Ministry of Education with emphasis on job-oriented training to match the requirements of the field.

D. Technical Education

The technician level training as a separate stream was initiated in the country in 1950s with the establishment of two-polytechnics for the training of engineering technicians so as to provide a link between skilled manpower and engineers. Presently, there are 35 polytechnics (including 13 women polytechnics) and 14 colleges of technology in the country with enrolment of 28,827 and intake capacity of 11,764 and output of 4,796 students. These institutions offer a three-year post-matric Diploma of Associate Engineer (DAE) in 21 technologies. The polytechnics follow curricula for the diploma courses as approved by the Federal Ministry of Education so as to maintain uniformity in technician education throughout the country. To provide diploma holders avenues for further enhancement of their qualifications, a programme of B. Tech (Pass) and B. Tech (Hons) courses each of two years duration was started in 1974. Ten Colleges of Technology (Upgraded Polytechnics) offer the B. Tech programme in selected technologies. These colleges of technology are affiliated with various Engineering Universities who award degrees of B. Tech (Pass) and B. Tech (Hons). There is the problem of registration with Pakistan Engineering Council as the said council has refused to register them as professional Engineers/Technologists. One possible way to overcome this problem is to establish a Council of Technical and Vocational Education on the pattern of Pakistan Engineering Council to take care of Diploma holders (technicians) and B. Tech degree holders (technologists). This would be in line with the provisions of the new Education Policy which is on the anvil.

Major issues/problems confronting Technical Education are:

- Shortage of duly qualified teachers in Polytechnics and Colleges of Technology due to unattractive service structure and lack of incentives.
- Out-dated curricula needs updating and making it relevant to job requirements.
- Lack of interaction/liaison between technical institutions and industry.
- Mismatch between supply and demand; there is over supply in some traditional technologies (civil, mechanical, electrical, etc.) where as short supply in new emerging technologies (e.g. electronics, computer, catering and hotel management, food technology, etc.)

- Academic equivalence/non-recognition of B. Tech degree by the Pakistan Engineering Council, which is causing unrest among the B. Tech. degree holders and ruining the future of this useful programme.

2.1 Seventh Plan Provision

There is a provision of Rs. 2,000,000 million for technical education sector. The Plan stresses to improve substantially technical and vocational training facilities by establishing the following:

- 31 new polytechnics including 12 in the private sector;
- 50 new vocational institutes, 10 for males and 40 for females;
- 4 new Colleges of Commerce;
- upgradation of 6 existing commercial training institutes to colleges of commerce; and
- strenthening of exisitng colleges of technology.

2.2 Provisions of Education Policy

As per policy statement, the number of technical and vocational institutions will be increased and facilities for technical and vocational education will be made available at Tehsil level in accordance with the needs of the area. The private sector will be invited to set up technical and vocational institutions and will be provided incentives for this purpose (through Provincial and Federal Education Foundations). The status of, and career opportunities for technicians will be improved. The curricula will be kept under constant review to ensure that changes on account of advancement in technologies and new emerging technologies are incorporated in the courses of study. A network of technical teacher training institutes will be established, one in each Province, and linked with the National Technical Teachers Training College at the Federal level. A large number of trade schools will be developed in the rural areas as a part of general middle and secondary schools in the evening shift. One vocational subject will be made a compulsory part of a general education. Moreover, opportunities will be provided for the technical and vocational education of women.

Ministry of Education has taken the following steps for the promotion of technical education.

- With the assistance of Asian Development Bank, a National Technical Teachers Training College and a Women Polytechnic Institutes at Islamabad have been established. Besides facilities at 11 polytechnics have been strengthened under this loan, in Punjab, Sindh and NWFP. The NTTC Islamabad helps in improving the quality of teaching learning necessary through full time courses in subjects relevant to the needs of technical teachers.

- A Polytechnic Institute for boys is being established in Islamabad to impart education in five technologies, i.e., Electronics, Electrical, Civil, Mechanical and Computer to sixty students in each technology.
- Under an approved scheme titled "Award of Overseas Scholarships to Polytechnic Teachers" technical teacher are being trained in the U.K. A similar training has been provided to a large group of fifty-three teachers in USA under ADB loan.
- For the development of Teaching Learning Resources for Polytechnics under an approved scheme for technical manuals, so far sixty-five technical manuals have been so far developed and forty-five have been printed and distributed to Polytechnic Institutes across the country.
- For bringing the desired changes in technical and vocational education system in Pakistan, a study with the assistance of ADB is under way. As result of this study, several projects of far-reaching significance in technical education would emerge. This on-going study, for futuristic developments, will be based on Demand-Led Model rather than Supply-Led Model.

2.3 Future Directions/Thrusts/Priorities

- Curricula in technical and vocational education will be restructured to make the relevant to the long term goals of technical education, market requirements and emerging new technologies and needs of the world of work of the 21st century.
- Teaching-Learning Packages will be developed for various courses offered in technical institutions.
- A national resource centre will be established for technical education and libraries of universities of engineering, polytechnic institutes and commercial institutes will be enriched with quality publications.
- Manuals of standards will be developed for vocational institutes, commercial polytechnic institutes, polytechnic institutes, colleges of technology and universities of engineering and technology for economical and effective use of financial resources.
- 10 per cent of the faculty of polytechnic institutes and universities of engineering and technology will be offered opportunities of higher education and training in country and overseas leading to M. Sc., Ph.D. in engineering fields.
- 25 per cent of the existing agro-technical schools will be selected for consolidation of facilities to attain better skill and orientation at pre-vocational level in general education stream.
- One vocational institute for male/female will be established in selected tehsils in line with needs of the area.

- One polytechnic institute for male or female will be established in selected districts in line with the needs of the area.
- One College of Engineering or University of Engineering or one institute of higher learning in engineering and technology will be established at each Divisional Headquarters to provide equal opportunity of technical education to various regions of the country.
- Legislation for provision of industrial training for engineering and technical graduates will be enacted.

Part III

TRAINING MODES AND SYSTEM

3.1 Organizational Structures

The Government of Pakistan recognized the importance of technician education as part of their policy of industrialization and providing the technical manpower needed for development projects. This type of education was therefore started by opening a few polytechnic institutes in Pakistan from 1954 onwards and during the second five year plan period it gained momentum by opening quite a number of such institutes in various parts of the country. In the third, fourth and fifth five-year plans, further expansion took place and during the sixth five year plan, about forty polytechnics had become insufficient. Keeping this in view, second shift had to be started in some of them.

Polytechnic institutes have an important role to play in the development of Pakistan. The product of these institutions should be equipped to possess, (a) skill in industrial processes; (b) an understanding of the principles underlying these processes; and, (c) an experience in handling the industrial worker in a competitive field in which efficiency is essential. It is the possession of the last two qualities which differentiates the technician from the operator of machines and permits him to understand the intention of engineers and executive staff and interpret these to the skilled and semi-skilled workers. Courses at this level and recruitment of staff to teach them should, therefore be guided by these objectives.

The targets in technical education and vocational training are illustrated below:

Table 1. Major Targets of National Education Policy

	Existing (1990-91)	Target (2002)
A. Polytechnics:		
Institutions	45	95
Enrolment	24,860	50,500
Teachers	1,546	3,241
B. College of Technology:		
Institutions	11	22
Enrolment	13,863	26,000
Teachers	737	1,474
C. Vocational:		
Institutions	404	782
Enrolment	56,397	100,000
Teachers	1,685	3,128
D. Vocational High Schools:		
Institutions	nil	1,000
Enrolment	nil	50,000
Teachers	nil	16,000

Source: The MOE, Government of Pakistan, Islamabad and the ADB, Manila Philippines (June 1992)

3.2 Role of Industrial/Enterprise-based Training

To secure industry relevance, TEVT programmes must match the needs of the end user - the industry or employer. This can be achieved by closer links with industry to get a continuous feedback to adjust training programmes and curricula and by the use of monitoring system to keep track of changing manpower demands in industry. TEVT institutions train workers who ultimately get jobs in industry. Thus, these two organizations are partners in human resource development and for each to serve the interests of the other, strong linkages are needed. The socio-economic and technology changes affect job markets and ultimately the type and level of the trained work force. These variables give rise to functions in job markets and people resort to further training, for a change of profession.

The efficiency of the technical education and vocational training system has been reduced by weak linkages with industry, inflexible curricula, weak management and inadequate autonomy of institutions. The absence of proper linkages with industry is a barrier to increasing the external efficiency of the TEVT system. The lack of this linkage is seen at all levels of training system. Institutions even in larger cities, have difficulties in securing on-the-job training places in industry for students. Those in the less urban area, where there is hardly any industrial activity, have difficulty in finding training slots for students. Thus, with few exceptions, linkages with industry are difficult to establish. Institutions also do not have the time, means, staff or funds to forge links with industry and to set up job placement or guidance units. They also do not have adequate resources to promote job opportunities for their graduate, liaise with employers, respond to industry's queries, visit industries, carry out industrial surveys or tracer studies or enter into collaborative ventures with employers.

The establishment of permanent advisory committees for government vocational institutions, polytechnics, colleges of technology should enable the institutions to receive feedback on industrial needs (South Korea has established thousands of such advisory committees at the institutional level). An interested and involved advisory committee is invaluable.

Institution-Industry linkages can also help in:

- training existing instructors of institutions in local companies or industries or even elsewhere;
- recruiting contract instructors for specialised courses;
- purchasing new machinery; and,
- doing part of the training away from the institutions.

3.3 Technician Education and Training

The training of technicians in Pakistan is currently conducted through a three-year post class X programme leading to the award of Diploma of Associate Engineer. The programme is offered in Polytechnic Institutes and Colleges of

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Technology. Post Diploma degree programmes in technology are offered in the colleges of technology. Some 28,820 students are enrolled in these programmes in some 49 government institutions: 35 poly/montechnics including 13 polytechnics for women; 14 government colleges of technology. At present the annual intake to the polytechnic system is about 11,764.

DIPLOMA OF ASSOCIATE ENGINEER PROGRAMME

Programme design for the Diploma of Associate Engineer follows a broad general structure of 40 per cent theory and 60 per cent practical. A major review of the polytechnic curriculum was undertaken in 1976 and implemented after further modification in 1980.

CURRICULUM DOCUMENTATION

The curriculum documentation for the Diploma of Associate Engineer lacks the detail necessary to identify the training objectives of the programme in measurable, behavioral terms. The separation of practice and theory in curriculum and examination leads to the serious isolation of practice from theory in the actual training situation. There is no effective integration of theory and practice.

SYSTEM PERFORMANCE AND EFFICIENCY APPLICATIONS, AND ADMISSIONS

Demand for admission to polytechnic programme is much higher than institutional capacity.

OUTPUT

Only 20 per cent of entrants complete DAE in minimum time despite the highly selective intake.

QUALITY OF PERFORMANCE

Graduates of the polytechnics are of low quality and lack the skills required by industry. The main causes are: ineffective interaction with industry, lack of knowledge about industry, and the lack of fit between their skills and what was required by industry.

Very low allocation to raw materials. Over-all, average expenditure per student for materials is grossly inadequate for appropriate training in terms of the polytechnic courses.

POLYTECHNIC TRAINING FOR WOMEN

The development of polytechnic facilities for women has been slow. A major problem has been in the selection of appropriate training areas given existing socio-cultural conditions, particularly of courses outside the traditional and well supplied sewing and needlecraft areas. Programmes being introduced now include architecture, electronics, secretarial (usually as certificate/diploma of commerce) as well as dress design, tailoring and related areas.

DEGREE PROGRAMMES FOR TECHNICIANS

Polytechnic programmes introduced in 1955 were terminal diploma programmes. Student pressure for upward mobility for access to degree status, eventually led to the introduction in 1973 of post diploma degrees in technology. Selected polytechnics were upgraded to colleges of technology to offer the degree programmes, through university affiliation, while continuing to offer DAE programme.

The degree programmes currently offered are the two B. Tech. (pass) requiring DAE entry, followed by the two year B. Tech (Hons). Each course is organized in a "*sandwich*" model of one year institutional training and one year supervised industrial experience. Course structures and programmes vary amongst provinces. Total annual enrolment is approximately 2,200. Total national B. Tech. (Hons) output over the last ten years has totalled some 1,500.

AREAS OF TRAINING

Polytechnic programmes are offered in two separate areas. The majority of total enrolments of over 60 per cent is in the traditional broad based mechanical, civil, and electrical areas. Specialist programmes offered, include foundry and pattern making, printing and graphic arts. News technologies include: micro-processors, oil, gas and petro-chemicals, communications, mining, metallurgy, ship building and industrial design for introduction in the Seventh Five-Year Plan (1988-93).

GRADUATE EMPLOYMENT

No comprehensive data on graduate employment are available, job placement or vocational guidance systems do not exist at least formally in the directorates or within the institutes, and no tracer studies of graduate employment are available. Little data exist for meaningful planning provision in terms of employment needs.

THE INSTITUTIONS, BUILDINGS, FACILITIES, EQUIPMENT AND MATERIALS

The physical plant of the polytechnics is poorly maintained. In other words, practical classes could not be conducted because of the condition of, equipment through lack of maintenance or the lack of raw materials.

Many institutions have inadequate facilities and equipment including audio-visual aids, tools and equipment, and library resources. There is a market shortage of teaching books and materials.

TEACHING AND TEACHERS

Teaching process in the polytechnics is mostly lecture based with stress on the academic and a strong demand for student rote learning. There is resistance to practical work and actual industrial application. There are teacher shortages in the polytechnics in some specific technical areas – instrumentation, electronics, computing.

MANAGEMENT OF INSTITUTIONS

The management process of the polytechnic system is very out-dated and conventional. The Directorates of Technical Education are understaffed. There is no effective central management information system. There is virtually a total lack of systems and processes for industry linkage and curriculum monitoring and review.

ISSUE IN TECHNICIAN TRAINING

There have been continuing criticisms of the relevance and quality of polytechnic programmes and the efficiency and effectiveness of the system in terms of the needs of industry. Co-ordinated processes for industry links are required as basis for the establishment of performance and on-going curriculum monitoring and review and as basis for system planning of training areas and enrolment. There is urgent need for technician manpower in new technologies.

There is confusion over programme objectives between vocational, technician training and academic education in technology. Management structures and systems require review both centrally and for the administration of the institutions providing technician training. Development of appropriate management systems is essential.

There is also the need for further qualitative upgrading of the technician training institutions: facilities, equipment and resources and the training of teachers.

FUTURE DIRECTIONS/THRUSTS/PRIORITIES

Some of the technologies for which adequate manpower base and physical infrastructure has to be created relate to multifaceted activities aimed at integrated rural/community development with a view to reaching the common man and improving his quality of life. Technologies need to be developed for development of small farm machinery, low cost housing, water supply and sanitation projects, low cost roads, rural energy development, water management and harvesting, small scale industries based upon rural agricultural and mineral resources, post harvest technologies, pest control, food preservation, live stock development and management, small scale entre-preneurship resource management, etc.

Some of the modern technologies which would concurrently be needed relate to the fields to micro-processors, solid state circuitory, electronics, computer applications, advanced manufacturing techniques including robotics, application of space and remote sensing for natural resources of energy including nuclear power, biomedical engineering, electro-optical equipment, synthetic materials, high yielding crops, efficient transportation system including aviation.

The following emerging fields would be introduced in polytechnics in future programmes: computer (hardware and software), microprocessors, oil and petro-chemical, rubber, leather, instrumentation, rural development, industrial design, town planning, ship building, aeronautical, telecommunication, catering and hotel management, bio-medical technology, mining and metallurgy, wool technology, food technology, hair dressing, beautification and cosmetics, printing and graphic arts.

Table 2. List of Courses Offered

Vocational Institutes		Polytechnics	Colleges of Technology (B. Tech.)	Engineering Colleges, Universities
Girls	Boys			
1. Tailoring & Dressmaking	1. Electrician	1. Civil	1. Civil	1. Civil
2. Machine Embroidery	2. Mechanic	2. Architecture	2. Electrical	2. Electrical
3. Hand Embroidery	3. Die Making	3. Public Health	3. Mechanical	3. Mechanical
4. Knitting (Hand, Machine)	4. Electric Wiring	4. Drafting and Designing	4. Electrical Power	4. Chemical
5. Leather Work	5. Carpentry	5. Machine Shop	5. Electronics and Communication	5. Petroleum and Gas
6. Cutting	6. Foundry	6. Metallurgy and Welding	6. Airconditioning	6. Metallurgical
7. Fret-work	7. Mechanical Draftsman	7. Instrument	7. Automobile	7. Mining
8. Printing	8. Welding (Electric and Gas	8. Foundry and Pattern Making	8. Mech. Production	8. Architecture
9. Wood Work	9. Turner	9. Electrical	9. Chemical	9. Electronics
10.Typing	10.General Fitter	10.Chemical	10.Construction	10.Industrial Engineering Management
11.Drawing and Painting	11.Electric Winding	11.Textile Weaving	11.Highway	11.Agriculture
12.Drawing	12.Auto and Diesel Mechanic	12.Textile Spinning	12.Public Health	12.Textile
13.Cooking	13.Tracer	13.Radio, TV and Electronics		
14.Food Preservation	14.Plumber and Pipe Fitter	14.Tower		
15.English Typing and Shorthand	15.Telex Radio Mechanic	15.Refrigeration		
16.Fancy Craft	16.Machinist	16.Watch Making		
17.Home Management	17.Refigeration and Air-conditioning	17.Glass and Ceramics		
18.Drawing and Designing	18.Paintry	18.Tool Design		
	19.Tailoring	19.Mechanical		
	20.Armature Winding	20.Auto and Diesel		
	21.Molder	21.Auto and Farm Machinery		
	22.Sheet Metal Worker			
	23.Brick Layer			
	24.Electrician			
	25.Building (Drafting)			
	26.Surveying			
	27.Building (construction)			

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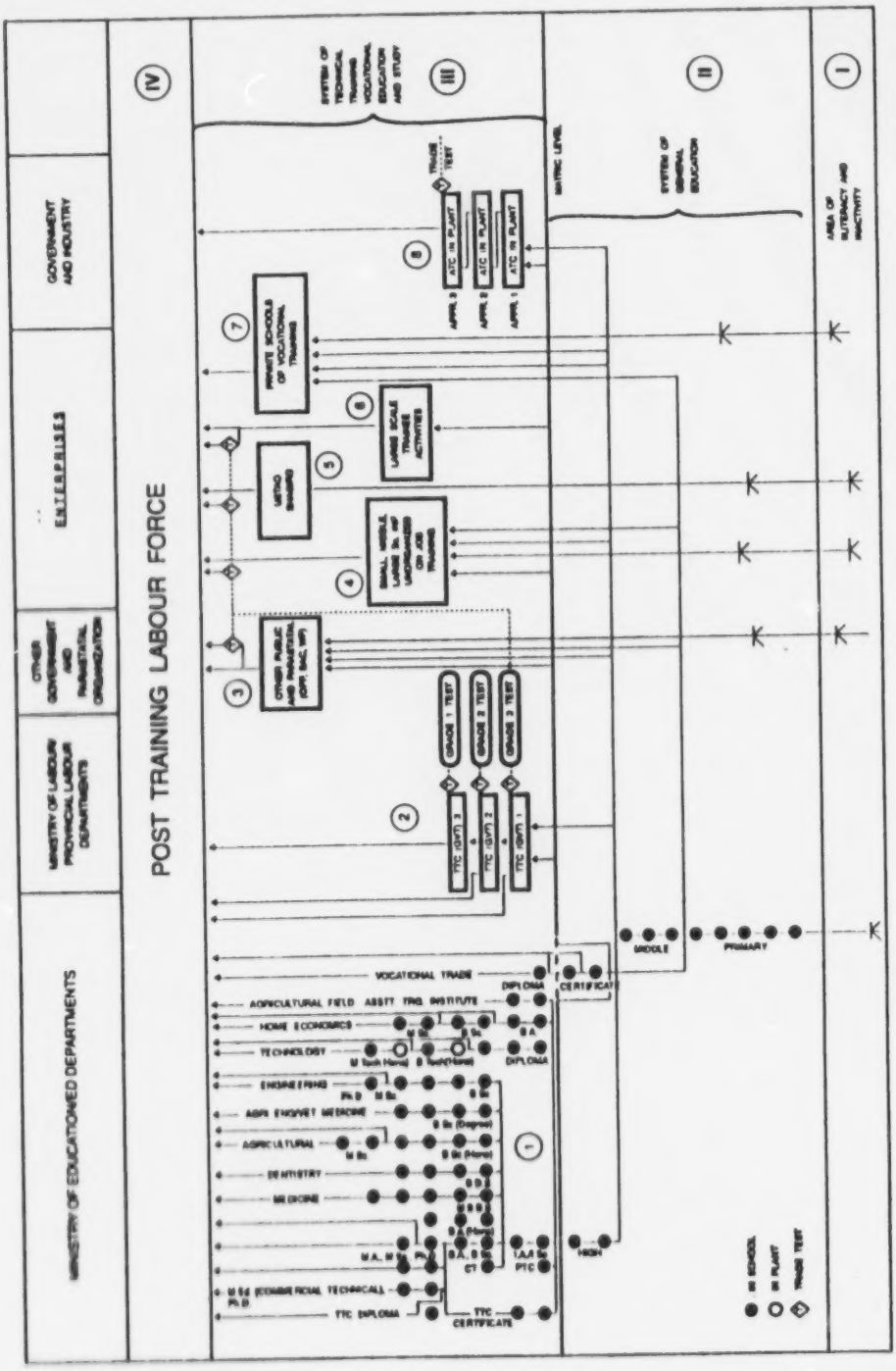
The System of Education and Training in Pakistan



Part IV

INDUSTRIAL NEEDS AND MANPOWER DEMANDS

Technical education and training of technicians has been considered as a crucial sector of manpower development in achieving the socio-economic goals by Pakistan's developing economy. The last two decades have witnessed eminent development in establishment of new institutions or expansion of the existing ones. Inspite of these developments and investments, concern for technicians (quality-wise) with adequate skills, knowledge and attitudes is on the increase.

The need for considerable improvement in the quality of TEVT is fully recognized. However, the current lack of "*quality*" training to recognized trade standards has created anomalies in the employment market which have become complex over time. Employers either recruit over-qualified engineers and technicians to undertake work which is below their training but are not prepared to recruit educated, but untrained or semi-trained students and train them "*on the job*". The large over supply of students at the professional and technical level means that such persons are available, if they can be encouraged into employment. However, many prefer to remain unemployed or enter self-employment rather than accept a position which they feel to be below their perceived abilities.

Therefore, present TEVT system in Pakistan has failed to provide adequate, relevant high quality training to meet Pakistan's manpower needs. Current basic training programmes are not producing skilled workers to the skill standards required by industry. Over-concentration on traditional areas in technician and commerce training has led to the shortage of manpower in new high technology areas, a shortage which will become more serious in the immediate future.

It may also be mentioned that due to present disparate administrative agencies for TEVT, there is lack of:

i) a system for identifying changing industry manpower needs for planning and implementing national training to meet those needs.

ii) an on-going process for industry training needs assessment, development of training strategies and associated programmes and their curriculum development.

iii) adequate database and management system for effective planning and management.

iv) uniformity of awards and certification processes within TEVT.

It may be mentioned that the demand for "*quality skills at all levels is growing faster than planned supply*". Therefore, to meet manpower requirements of the industrial sector, a training needs survey for industrial occupational skills is

desirable on a provincial and regional basis. Moreover, training system need expansion for the development of skills required for rural development. Training facilities are also needed for small-scale industry development including management and super-visory training.

To cater to the manpower needs of industry, there must be quantitative expansion of training programmes in various skills but qualitative improvement must have priority over qualitative expansion in the light of relatively small demands for skilled manpower in industry.

Technical training institutions need to keep liaison with industry to formulate job descriptions for the jobs available in the industry as well as to determine the influence of planned technological changes on future jobs so that these training institutions maybe able to produce the manpower with demanded skills.

MANPOWER DEMANDS

During the 7th Five Year Plan Period, the labor ministry/labor departments planned to produce 225,000 skilled and 29,500 semi-skilled workers. These figures include the expansion targets of the national vocational training projects as well as other sources. For the present, the programmes at this level as envisaged by the National Training Board (NTB) and other related organizations may be sufficient for the plan period.

It may be mentioned that it was one of the objectives of Seventh Five-Year Plan to create 6.1 million new employment opportunities. Because of the weakness of the present database which has, by necessity, been used as a base for these projections, they should only be interpreted as indicative of future trends.

PROBLEMS, ISSUES AND PRIORITIES

A technical education system must provide training which in terms of standard produces a product which is acceptable to the industry or is capable of making a contribution to the economic growth of the society he lives in. The soundness of a technical education system depends on the degree and extent to which it is responsive to the manpower needs.

The critical elements and processes within a system of technical education are the educational structure, the place of technical education in the over-all national education set up, teacher training and faculty development, relationship of educational growth to industrial growth, teaching methods and materials, student evaluation and examination, and educational research and innovations. Undoubtedly, an attempt has been made to expand technical education system to meet the nations demand to build up a reasonable infrastructure for the supply of technical manpower in the country.

It has been pointed out in the report of Hawthorn Institute of Education (HIE) that (a) one of the weakest links between technical education and training is lack of co-ordination between polytechnics and industry; (b) and the number of DAE pass-outs and their fields do not relate to job market because information regarding need assessment is lacking.

The co-operation between polytechnic and industry is unsatisfactory due to (i) insufficient motivations and incentives for both ends; (ii) negative attitudes of student and trade unions; (iii) problems of communication and public relations; and, (iv) apathy and casual interest of the industry.

The importance of matching the output of polytechnics with the demand of industry/field needs emphasis. It is unfortunate that much headway has not yet been made in this regard, except two studies, including one on relevance of technologies of polytechnics to needs of employment market by the Directorate of Technical Education in N.W. F. P. which helped to some extent. However, the country-wide data on the type and quantum of needs is still lacking. Some of the problems in the task of need assessment are quite genuine and may be summarized as below:

i) Most of the employers due to lack of interest and motivation remain unconcerned and apathetic and often are unwilling to co-operate.

ii) Many employers are not familiar with the level and scope of polytechnic programmes and are unable to determine their appropriateness vis-a-vis industrial needs.

iii) Large number of employers do not plan ahead and are not very much clear about their short/long term needs.

iv) In planning documents like Five-Year Plans, Education Policy, etc; the expansion of TEVT is tied up with the industrial growth but due to resource constraints in public sector, the short falls in industrial development projections far exceed those in TEVT. Consequently, polytechnics continue enrolling and passing out diploma holders irrespective of actual industrial needs.

v) Technology and DAE Programme once introduced are socially and politically difficult to withdraw on the consideration of reduction in demand. During the period, many students in the pipe line, will pass-out and add to the imbalance between supply and demand.

vi) Due to credibility gap the surveys for need-assessment lack validity and authenticity.

Part V

WOMEN IN TEVT

Standard of development and well-being of the people of a country is directly measured by the quality and size of educational facilities available within the country. Education is the cultural force that inculcates and builds up an enlightened attitude that is a sacred asset for any nation. No plan of economic development and no dream of economic growth can become a reality unless there is a good foundation for education. For the developing countries, it is therefore extremely important to pool and harness the available resources for maximum benefit to the greatest member of its people.

There is little disagreement today that human resource development plays an important role in the economic progress of a nation. In fact the strength of a nation lives in the strength of its educational system.

However, the inability to touch heights of excellence in scientific and technical education, and the failure to prepare a critical mass of manpower in the area of science and technology depends on proper policy and its implementation planning.

Women involvement in industrial development planning is of great significance. The policies and strategies need to be developed, keeping inview the fact that women constitute an important part of the environment, therefore, their role is basic and vital. Their interests, well being and harmony with the environment must be central theme of planning.

Technical education of women has been playing a vital role to provide manpower in Pakistan and regional countries. The women are being trained in this sector to enhance manpower for industries and commerce, the shortage not being met by men technicians.

To achieve national development goals, it is essential to have qualified women in various sectors of a country. Women have vital role in industry, commerce and agriculture.

The trained skilled women of Pakistan and other developing countries unfortunately do not enjoy the status which must be given to the fair sex for their contribution in the field of industries and commerce.

This is so because of the fact that the technical education field for women is still in its infancy in Pakistan. The qualified women/girl from vocational/polytechnic institutions are fully skilled but in certain cases they do not possess the standard of industrial requirements. This is because of the fact that there is a lack co-ordination between industries and technicians training institutions. This gap in the recent year has been minimized to a considerable extent.

The girls or women from polytechnic institutions join industry in the capacity of operators, technicians, teachers, receptionist, secretaries, etc. After acquiring sufficient skill in their respective fields and having a lot of experience (5-10 years) at their disposal they more to the position of supervisory cadre.

5.1 Policy Institutional Development

Policy institution development for women in TEVT can be explained as below:

A. Government Vocational Institutes for Women Review and Assistance (GVIWRA)

It is necessary to review the function, objectives, programmes and extent of provision to the GVIWRA. The curriculum of the GVIWRA must be completely reassessed and revised in the light of the results of labour surveys and government policies regarding employment opportunities for women. The present emphasis on "*traditional skills*" for women had little relevance to real employment opportunities. There is a need to upgrade all GVIWRA.

The government vocational institutes for boys and women in Sind and NWFP under the Department of Education be upgraded and brought up to the international level.

The criteria be formulated to upgrade for girls/women to offer courses that are "*income earning*" beyond those of the traditional "*income saving*" and "*income supplementing*" through courses in serving embroidery and knitting.

B. Equity related Issues

Equity in TEVT in Pakistan can be enhanced by developing special programmes to meet the needs of women.

a) Increasing Participation of Women in TEVT

The underutilization of human resources is most evident in the case of women who make up about half the population of Pakistan. Without the effective participation of women in economic activity, Pakistan's transformation into a dynamic middle income economy would be difficult. In 1986, the rate of female activity in Pakistan at seven per cent was among the lowest in Asia compared with 26 per cent in Malaysia, 27.9 per cent in Indonesia and 50 per cent in Thailand (ILO, Yearbook of Labour Statistics, 1989). Vocational training for women is an important avenue to increase women's participation in the main stream of economic life and thereby raise

Source: (The MOE, Government of Pakistan, Islamabad and the Asian Development Bank, Manila Philippines: June, 1992).

their productivity and contribution to economic development and family welfare. The skill training given by training agencies is mainly in handicraft and cottage industries. With few exceptions, skill training is narrow and heavily concentrated on needle work such as tailoring, embroidery and related areas.

The access and equity in the provision of TEVT to women students in rural area should be increased through the provision of special courses and incentives to women students and the establishment of rural monotechnics. To enable more women participate in the main stream of economic life, women students should be given scholarships and other incentives to enroll in technical education. Courses suitable to women should be expanded to enable greater participation. This should enable women to raise their productivity and contribution to economic development and family welfare. As more women become economically productive they would invest more in female education and training and health care and thereby increase their productivity.

b) Review of Courses and Curricula for Women

TEVT for women is available more at the vocational level and less at the technician, technologist and engineer levels because among other things, women's contribution to social and economic development as well as their needs is often not fully appreciated. Females attending vocational courses, seek to acquire some saleable skills by which they can supplement their family income. Vocational training for women provided by various government agencies and NGOs are considered more as a social service to their well-being and less as an investment to harness their competencies. Women in Pakistan can, in fact, be a rich contributor to economic activity and a source of income generation through skill acquisition and performance in jobs. The acquisition of employable skills for income generating occupations for women are not always provided on full time basis. Training programmes are not based on specific objectives. They are not properly funded and are introduced with ill-drawn curriculum in an ineffective delivery system. The examination and certification systems are also not effective.

c) Expansion of Training Programmes for Women

There is a need to improve women's participation rate in economic development to enhance family incomes and standard of living. To this end, the low quality of vocational training provided in the highly inefficient system needs to be recognized and improved on the basis of increased opportunities, equity, quality and efficiency. There is a need to expand vocational training for women not only on equity grounds but also to enhance skill development and raise the quality of the women labour force. Since most of the training facilities for women are confined to urban centres

and their environs, there is a need to increase opportunities in rural areas. The need to widen the range of courses especially to train women in modern methods of agriculture, dairy farming, livestock poultry, bee farming, food pre-servation and fruit canning and many other areas, to enable them to find employment or self-employment in agriculture related income generating activities. Again, the growing displacement of handicraft by manufacturing and individual workers by large companies in the service, trade and manufacturing sector and the expansion of new services has increased the demand for female labour. Further, increased use of modern equipment to modernize the service sector has opened up new occupations for women hitherto denied to them. Advances in science and technology are modifying the structure of industrial production. Some jobs are less demanding of physical energy and are further increasing the employment market for women. There is also an urgent need to provide good training facilities, equipment and new courses and curricula together with well-trained teachers and other support services to upgrade the quality and efficiency of vocational training for women in the GVIWRA; which would in turn improve the equity of educational opportunity for women.

5.2 On-going Policies and Structures/Schemes

This is an on-going activity which will continue to grow further in developing countries like Pakistan. So far, less emphasis has been given on women. Prime Minister's five point scheme lays maximum stress in the 7th Five-Year Plan on the opening of new trade schools, vocational institutions and polytechnic institutions in the forthcoming years as follows:

1. The number of women polytechnics will increase from 7-47 and mono-technic from 0-7 for women.
2. There would be 300 new commercial institutions and 100 new trade schools. The trade schools would produce 4,000 skilled women technicians by 1992. This would be an addition to existing facilities.
3. The opening up of new trade schools for women technicians would be a landmark in the history of Pakistan. It is assumed that one trade school would function at every tehsil headquarters and an infrastructure will be established for further improvement.

Part VI

CURRENT STATUS OF TECHNICAL AND VOCATIONAL EDUCATION

6.1 TVET in Formal Sector of Education and Training

The existing formal TEVT falls under four main categories: polytechnic colleges, commercial institutions, GVIs and the agro-technical programme of general education. Although these all fall under the general umbrella of the Ministry and Departments of Education, there is no national or provincial co-ordination between each of the four components. The polytechnic system was originally designed to produce quality technicians to the industrial sector but over the years there has been a steady decline in the quality of their output due to a variety of factors. These include a lack of responsiveness in the curriculum to the changing needs of the labour market, a decline in the standard of teaching resulting from a lowering of technical and practical experience on the part of the teaching staff, a shortfall in resources for the maintenance of facilities, and a lack of meaningful dialogue with employers. There is also a problem caused by the knock-on effect of a lowering of the general education standards and a failure of the polytechnics to apply more rigorous entry and exit criteria.

The formal technical education system is also responsible for the colleges and institutes of commerce. There has been a very rapid growth in this area particularly at Class XI - XII levels. Commerce is now a major part of TEVT in terms of enrollments and the number of institutions and teachers. Commerce has also been introduced into the programmes of the women's polytechnics.

Prior to the involvement of the Directorates of Manpower and Training, the education Ministry/Department assumed responsibility for the vocational training of out-of-school youth for which a network of GVIs were constructed in the provinces. In some provinces many of these have now passed to the control of the Labour Department.

Finally, the Education Ministry/Department for sometime introduced a relatively new approach to pre-vocational education in the middle and high schools. However, the agrotech scheme in schools is starved of financial resources, appropriate facilities and educated number of trained staff. There has been a general disappointment in the results and cost-benefits from investments in pre-vocational programmes.

6.2 TVET in Non-formal Sector of Education and Training

The TEVT system assumes its greatest complexity in the non-formal sector where 3,109 vocational training institutions are run by no less than 24 federal and provincial directorates and agencies. There is no inter-agency co-ordination at the policy level and many agencies operate their own curriculum, set their own standards and award their own certification. Although there are some points of contact at the provincial levels, particularly between the formal sector's departments of technical education and the non-formal sector manpower directorates, these lack specificity and structure in order to achieve any meaningful co-ordination.

The total enrollment of the non-formal sector is approximately 24,000 but its over-all capacity is estimated to be about 30,000 representing an over-capacity of training places of 20 per cent. Of this total, the manpower and training directorates have 74 institutions (ITCs, ATCs, GVIs, SDCs and YVCs) which have a total capacity of 13,563 and an enrolment of approximately 10,600.

6.3 TVET in the Informal Sector of Education and Training

In principle, there are three components to the informal sector. First, are the private sector institutions which offer training programmes often on behalf of the formal sector's certification systems and under the registration of provincial directorates of technical education. It is recognized that there is a role for these institutions, particularly at the short course and specific employment related-programme levels.

Private sector companies represent the second phase of the informal TEVT system. The government has encouraged private companies to participate in the preparation of the skilled labour force. The business community has not yet responded to such pleas and apart from the large established organizations, little real evidence of willing co-operation is visible. The system of apprenticeship being encouraged by the National Training Board is helping to improve industrial skills.

Thirdly, comes the Government enterprises and undertakings which are conducting training programmes largely independent of the programmes available in either the formal or non-formal sectors.

6.4 Standard and Certifications

While the formal sector's certifications and diplomas carry appropriate recognition, there are still problems of full accreditation vis-a-vis the B. Tech. programmes. The objectives of the present system of certification operated by the NTB Directorates of Manpower and training are unclear to some small business.

6.5 TVET Curriculum

There is very little formal integrated curriculum development in the internationally accepted meaning of the term. Furthermore, there is a great confusion over what should constitute curriculum amongst the different TEVT institutions. Whilst the shortcomings of curriculum development are recognized at the policy level, few TEVT teachers, particularly in the formal education sector, were trained in curriculum development processes or even appreciated the need for such an activity.

6.6 Facilities and Equipment

Throughout the country there are a large number of institutions which are inadequately supplied with basic TEVT teaching resources and workshop equipment.

6.7 The Human Resources for Staffing TEVT

Quality in TEVT is of major concern, both in terms of systems wastage in low success rates and in lack of fit between product and job market requirements in several sub-sectors of TEVT. The most significant cause of this is an inappropriate teacher/instructor employment and promotion requirements in terms of required teacher/instructor roles and low incidence of quality professional training for technical teachers and instructors throughout the TEVT system. There is need for the development of a rationalized and extended specialist training structure to provide a mechanism for qualitative change.

Part VII

CURRENT NATIONAL LEVEL TVE PROJECTS

7.1 Vocational Training Development Programme

Under the auspices of the Ministry of Labour Manpower and Overseas, Pakistanis Vocational Training Development Programme is underway since 1981. First phase of this project was funded by the World Bank and UNDP. After completaon of the National Vocational Training Programmes (NVTP) Phase I the IBRD (IDA), UNDP/ILO, EEC and CIDA have provided substantial credit/grant for NVTP Phase II which involves construction of new centres, equipment for existing centres, expansion in Apprenticeship Training within industry and instructors training programmes. At present, this project is in its full operation since April 1987. The World Bank has been reviewing this project regularly. Recently the Bank has undertaken training needs survey to assess the future demand of skilled manpower in the country. The study has recommended the establishment of additional vocational centres beginning phase II. They may not be established because of resource constraints as the existing vocational centres are becoming unsustainable for the provincial governments.

7.2 NTTTC and Polytechnics Project 419-Pak (SF)

Under the loan agreement 419-Pak (SF) of the Asian Development Bank, Technical Teachers Training Centre (NTTTC) and Polytechnic Project was launched at a total cost of Rs136.435 million. The project has three components: establishment of NTTTC, Islamabad strengthening of 11 polytechnic institutes (10 for men and one for women) in the provinces and establishment of a polytechnic institute for women, Islamabad (New Campus).

7.3 Development of Teaching Learning Resources (TLR)

Because of acute shortage of appropriately structured teaching learning resources, a project with Rs. 5 million was launched in January 1985 to develop 80 titles on selected subject of 7 key technologies (civil, electronic, mechanical, chemical, radio, T.V. and auto and diesel). So far 65 manuscripts have been developed out of which 45 have been printed and distributed for use in polytechnics all over the country.

7.4 Award of Overseas Scholarships to Polytechnic Teachers

To impart necessary training, a scheme titled Award of Overseas Scholarship to Polytechnic Teachers was initiated with a capital cost of Rs. 4.408 million. Under this project 17 polytechnic teachers, in 7 selected key technologies, have acquired 10 months diploma training from UK during the year 1986 and 1989 under this scheme. Two more teachers completed training during 1991-1992.

7.5 Training Programme in Various Institutions of USA

A training programme has been launched to import training to a large group of 53 teachers across the country at Oklahoma State University, USA during 1987-88. Two teachers from Polytechnic Institute for Women, Islamabad secured Diploma in Technical Teachers Education from Oklahoma State University, USA in 1991-92. The programme is under implementation.

7.6 Technical and Vocational Education Project Pakistan (TA No. 999-PAK)

With the assistance of Asian Development Bank, a study was undertaken in 1988-89 under the title "***Technical and Vocational Education Development Study in Pakistan***" at a cost of US $495,000 under TA-999-Pak. Hawthorn Institute of Education (HIE), Australia was contracted by the Bank as consultants for the study. They submitted a very comprehensive report containing three volumes covering various aspects of TEVT. These consultants made wide ranging recommendations for the rationalization of TEVT sub-sector through a series of policy organizational, administrative and institutional reforms. The proposals constituted a system wide view of TEVT in Pakistan and were generic in nature. They lacked details for undertaking specific policy decisions according to the nature and type of the proposals.

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APPENDIX

Table 1. Vocational, Technical and Engineering Institutions in Pakistan, 1988-1989

Province	Agro-technical Schools	Vocational Institutes			Commercial Institutes	Government Colleges of Technology/ Polytechnic Institutes			Engineering Colleges/Universities	
		Boys	Girls	Total		Male	Female	Total	Universities	Colleges
Punjab	3,128	38	98	136	†111	14	8	22	1	4
Sind	500	9	57	66	34	15	3	18	2	1
NWFP	921	15	10	25	13	5	1	6	1	-
Baluchistan	51	4	-	4	-	1	-	1	-	1
Federal Area/Cantt/ Garrison	88	2	-	2	-	-	1	1	-	-
A.J.K.	141	2	-	2	-	-	-	-	-	-
Pakistan Total	4,829	*70	165	235	158	**35	***13	48	4	6

Source: Data compiled by S & TE Wing (information received from concerned agencies).

* These include 56 Vocational Institutions.

** These include 14 Colleges of Technology.

*** These include 13 Women Polytechnic Institutes established by Women Division

† These include 12 commercial training institutes for female.

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Table 2. Number of Vocational, Commercial, Technical Institutions along with Intake Capacity, Enrolment and Output in Pakistan

Province	Agro-Technical Schools				Vocational Institutions						Polytechnic Institutions						Commercial Institutions					
	No. of Institutions				No. of Institutions						No. of Institutions						No. of Institutions					
	No.	Intake Capacity	Enrolment	Output	M	F	T	Intake Capacity	Enrolment	Output	M	F	T	Intake Capacity	Enrolment	Output	M	F	T	Intake Capacity	Enrolment	Output
Punjab	3,126	-	405,800	-	738	98	136	7,081	5,687	2,810	14	8	22	5,270	12,893	1,433	99	12	111	-	15,575	4,391
Sind	500	-	90,768	-	79	57	66	4,866	4,574	2,481	15	3	18	5,404	13,548	2,735	34	-	34	1,880	1,796	1,563
N.W.F.P.	921	-	24,242	-	15	10	25	3,590	1,852	1,175	5	1	6	900	2,742	469	13	-	13	2,440	2,920	1,751
Baluchistan	51	-	10,250	-	4	-	4	830	725	506	1	0	1	130	438	131	-	-	-	-	-	-
Federal Area	88	-	26,015	-	2	-	4	220	128	60	-	1	1	40	100	28	-	-	-	-	-	-
A.J.K.	141	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pakistan Total	4,829	-	557,075	-	70	163	235	15,537	12,113		35	13	48	11,764	28,821	4,796	146	12	158	-	20,291	7,705

Table 3. List of Courses Offered

	Vocational Institutes		Polytechnics	College of Technology(B-Tech.)	Engineering Colleges/Universities
	Girls	Boys			
1.	Tailoring and Dressmaking	Electrician	Civil	Civil Technology	Civil Engineering
2.	Machine Embroidery	Mechanic	Architecture	Electrical Technology	Electrical Engineering
3.	Hand Embroidery	Die making	Public Health	Mechanical Technology	Mechanical Engineering
4.	Knitting (Hand, Machine)	Electric wiring	Drafting and designing	Electrical Power Technology	Chemical Engineering
5.	Leather work	Carpentry	Machine shop	Electrical and Communication Technology	Petroleum and Gas Engineering
6.	Cutting	Foundry	Metallurgy and welding	Automobile Technology	Metallurgical Engineering
7.	Fret work	Mechanical draftsman	Instrument	Automobile Technology	Mining Engineering
8.	Wood work	Welding (Electric and gas)	Foundry and pattern making	Mechanical Production Technology	Architectural Engineering
9.	Typing	Turner	Electrical	Chemical Technology	Electronic Engineering
10.	Drawing and painting	General fitter	Chemical	Construction Technology	Ind'l. Management Engineering
11.	Drawing	Electric winding	Textile weaving	Highway Technology	Agricultural Engineering
12.	Cooking	Auto and diesel mechanic	Textile spinning	Public Health Engineering	Textile Engineering
13.	Cooking	Tracer	Radio, TV and Electronics		
14.	Food preservation	Plumber and pipe fitter	Tower		
15.	English typing, shorthand	Telex radio mechanic	Refrigeration		
16.	Fancy craft	Machinist	Watch making		
17.	Home management	Ref. and Air-conditioning	Glass and ceramics		
18.	Drawing and designing	Painty	Toll design		
19.		Tailors	Mechanical		
20.		Armature winding	Auto and diesel		
21.		Moulder	Auto and farm machinery		
22.		Sheet metal worker			
23.		Brick layer			
24.		Electrician (Auto)			
25.		Building (Drafting)			
26.		Surveying			
27.		Building (Cons.)			

Source: ADB sponsored study (TA 999 Pak) on Technical and Vocational Education in Pakistan

Table 4. Physical Progress in Respect of Technical Education Targets of 7th Plan

S.No.	Institutions	Punjab	Sind	N.W.F.P.	Baluchistan	Total
(a)	Schemes Completed:					
	(i) Polytechnic/Monotechnic Institutes	2	4	2	-	8
	(ii) Colleges of Commerce	1	1	-	-	2
	(iii) Commercial Training Institutes	4	30	-	-	34
	(iv) Vocational Training Institutes (Women)	3	-	1	-	4
(b)	Schemes under Process/ Implementation:					
	(i) Polytechnic Institutes	4	21	3	-	28
	(ii) Colleges of Commerce	1	-	-	-	1
	(iii) Commercial Training Institutes	6	1	5	-	12
	(iv) Vocational Training Institutes (Women)	1	1	2	-	4

Table 5. List of Colleges of Technology, Polytechnic Institutes in Pakistan

	Punjab	Sind	N.W.F.P.	Baluchistan	Federal Capital Area
1.	Government College of Technology, Lahore	Government College of Technology, Karachi	Government College of Technology, Peshawar	Government College of Technology, Peshawar	Government Polytechnic Institute for Women, Islamabad
2.	Government College of Technology, Rasul	Government College of Technology, Hyderabad	Government Polytechnic Institute, Dera Ismail Khan		
3.	Government College of Technology, Multan	Government College of Technology, Khairpur	Government Polytechnic Institute, Nowshera		
4.	Government Polytechnic Institute, Sialkot	Government Habib College of Technology, Nawabshah	Government Polytechnic Institute, Sarai Saleh, Hanpur		
5.	Government College of Technology	Government Polytechnic Institute, Larkana	Government Polytechnic Institute, Swat		
6.	Government College of Technology, Sargodha	Government Jamia Millia Polytechnic Institute, Karachi	Government Polytechnic Institute for Women, Peshawar		
7.	Government College of Technology, Bahawalpur	Government Polytechnic Institute, (Boys) Sukkur			
8.	Government Polytechnic Institute, Jelah	Government Saifee Elde Zahabi Institute of Technology, Karachi			
9.	Government College of Technology, Sahiwal	Government Polytechnic Institute, Jacobabad			
10.	Government Swedish, Pak. Institute of Technology, Gujrat	Government Polytechnic Institute, Sanghar			
11.	Government Polytechnic Institute, Rehim Yar Khan	Government Polytechnic Institute, Mirpurkhas			
12.	Government Polytechnic Institute for Printing and Graphic Arts, Lahore	Government Polytechnic Institute, Badin			
13.	Government Technical Training College, Faisalabad	Pakistan Swedish Institute of Technology, Karachi			
14.	Government Polytechnic Institute, Jehlum	Government Polytechnic Institute, Dadu			
15.	Government Polytechnic Institute for Women, Lahore	Government Polytechnic Institute, Thatta			
16.	Government Polytechnic Institute for Women, Faisalabad	Government Polytechnic Institute for Women, Karachi			
17.	Government Polytechnic Institute for Women, Multan	Government Polytechnic Institute for Women, Sukkur			
18.	Government Polytechnic Institute for Women, Bahawalpur	Government Polytechnic Institute for Women, Hyderabad			
19.	Government Polytechnic Institute for Women, Rawalpindi				
20.	Government Polytechnic Institute for Women, Sargodha				
21.	Government Polytechnic Institute for Women, Gujranwala				
22.	Government Polytechnic Institute for Women, Sialkot				

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LIST OF VOCATIONAL SUBJECTS
(250 Marks each)

General

Students may take any one of the following subjects, each carrying 250 marks.

1. Education
2. Health and Physical Education
3. Elementary Nursing and First Aid
4. Calligraphy
5. Photography
6. Local (community) Crafts

Commercial

Students may take the subject "Type Writing" which is compulsory, carrying 100 marks and one subject from No. 2 to 8, each carrying 150 marks.

1. Type Writing (compulsory)
2. Bookkeeping and Accounts
3. Secretarial Practice
4. Business Methods
5. Salesmanship
6. Insurance
7. Banking
8. Import and Export Practice

Agriculture

Students may take "General Agriculture" which is compulsory carrying 50 marks and any other two subjects from No. 2 to 7 carrying 100 marks each.

1. General Agriculture (compulsory core course)
2. Farm Economics

3. Crop Products
4. Livestock Farming
5. Animal Production
6. Productive Insects and Fish Culture
7. Horticulture

Industrial

Students may select any one subject from one of the following Trade Groups except Mechanical Trade Groups for which separate instructions are given. Each subject carries 250 marks including 50 marks for Technical Drawing.

1. Mechanical Trade Group (Fitting will be compulsory in class IX for all students taking this group. In class X students will opt for one of the remaining trades or continue Fitting)
   - (i) Fitting
   - (ii) Turning
   - (iii) Plumbing
   - (iv) Welding
   - (v) Electro-plating
   - (vi) Molding and Casting
2. Electrical Trades Group
   - (i) Electrical Wiring
   - (ii) Electrical Winding
   - (iii) Household Appliances
   - (iv) Radio Servicing
3. Wood Trades Group
   - (i) Furniture and Cabinet Making
   - (ii) Wood Carving and Inlay Work
   - (iii) Joinery
   - (iv) Wood Turning and Lacquer Work
4. Drafting Trades Group
   - (i) Mechanical Drafting
   - (ii) Civil Drafting
5. Printing and Graphic Trades Group
   - (i) Elementary Printing
   - (ii) Book Binding
6. Ceramics Trades Group
   - (i) Ceramics
   - (ii) Glass-making

7. Building Trades Group
   (i) Building Trades (Masonry, Painting and Distempering)
   (ii) Elementary Surveying

List of Colleges of Technology Offering B. Tech. Hons.Degree, as well as Diplomas in Various Technologies

S. No.	Name of College of Technology	Name of Technologies Offered
1.	Government of College of Technology, Lahore	Mech. Production, Auto and Refrigeration
2.	Government College of Technology, Faisalabad	Elect. Power and Electronics
3.	Government College of Technology, Rasul	Construction and Highway Public Health
4.	Government College of Technology, Multan	Chemical
5.	Government College of Technology, Bahawalpur	Mechanical Production
6.	Government College of Technology, Karachi	Civil Elect. and Mech.
7.	Government College of Technology, Hyderabad	-do-
8.	Government College of Technology, Khairpur	-do-
9.	Government College of Technology, Nawabshah	Industrial and Chemical Tech.
10.	Government College of Technology, Peshawar	Civil, Electrical and Mechanical

Pakistan Projected Additional Manpower Supply and Demand Selected Occupations, Seventh FYP Period 1988-1993

Major Occupational Groups	Selected Occupational Sub-Groups	1989-1993 Additional Demandf	1989-1993 Supply from TEVT
Professional, Technical and Related Workers	Engineers	8,411	22,,785
	Technicians	6,076	24,990
	Accounts	5,244	
	Others		5,340
Clerical and Related Workers	Clerical supervisors	7,792	
	Steno, Typists, Card Punching Operators	5,588	400
	Bookkeepers, Cashiers, and related Workers	7,155	
	Computing Machine Operators	706	35
	Transport and Communication Supervisors	4,233	
	Main Distribution Clerks and Workers	8,811	
	Telecom. Operators	3,310	30
	Others		105,710
Sales Workers	Tech., Salesmen, Commercial Travelers and Manufactures' Agents	1,316	
	Salesmen, Shop Assistants and Related Workers	62,741	
Service Workers	Cooks, Waiters, Bartenders and Related Workers	23,111	
	Hairdressers, Barbers Beauticians and Related Workers	12,259	
Agriculture	Farm Managers and Supervisors	7,310	
	Farmers, Agriculture and Animal Husbandry Workers	2,008,857	
	Forestry Workers	1,960	
	Fishermen, Hunters and Related Workers	6,764	
Production	Supervisors and Foremen	4,516	
	Miners, Quarrymen, Well Drillers and Related Workers	7,234	
	Metal Processors	8,973	
	Wood Preparation Workers, Paper Makers	6,963	
	Chemical Processors and Related Workers	3,375	
	Spinners, Weavers, Knitters, Dyers and Related Workers	79,647	
	Tanners, Fell-Mongers and Pelt Dressers	603	
	Food and Beverages Processors	16,698	

Pakistan Projected Additional Manpower Supply and Demand Selected Occupations, Seventh FYP Period 1988-1993 (cont'd)

Major Occupational Groups	Selected Occupational Sub-Groups	1989-1993 Additional Demandf	1989-1993 Supply from TEVT
	Tailors, Dressmakers, Sewers		
	Upholsterers and Related Workers	28,398	2,645
	Shoemakers and Leather Goods		(23,339)
	Makers	28,146	390
	Cabinet Makers and Related Wood		
	Workers	7,027	
	Stonecutters, Carvers	4,000	
	Blacksmiths, Tool Makers and MC Tool		
	Operators	37,431	4,865
	M/C Fitters, M/C Assemblers and		
	Instrument Makers (except electrical)	51,784	8,506
	Electrical Fitters and Related Workers	24,388	17,655
	Broadcasting Station and Sound		
	Equipment Operators, Cinema		
	Projectionist	323	
	Plumbers, Welders, Sheet Metal and		
	Structural Metal Preparers and		
	Erectors	9,302	8,355
	Jewelry and Precious Metal Workers	13,551	
	Class Formers, Potters and Related		
	Workers	25,849	
	Rubber and Plastics Product Makers	2,344	
	Printers and Related Workers	6,131	
	Painters	10,682	295
	Bricklayers, Carpenters and Other		
	Construction Workers	265,056	6,590
	Stationary Engine and Relate Equipment		
	Operators	2,737	

Note: Figure in parentheses is the output of Women's GVIs. It is not known how many will seek employment.

Pakistan Projected Additional Manpower Supply and Demand
Selected Occupations, 1993-1998

Major Occupational Groups	Selected Occupational Sub-Groups	1989-1993 Additional Demand	1989-1993 Supply from TEVT
Professional, Technical and Related Workers	Engineers	115,091	26,431
	Technicians	10,190	29,230
	Accountants	8,070	
	Others		7,235
Clerical and Related Workers	Clerical supervisors	13,270	
	Steno, Typists, Card Punching Operators	9,659	21,165
	Bookkeepers, Cashiers, and Related Workers	11,234	
	Computer Machine Operators	934	215
	Transport and Communication Supervisors	5,121	
	Mail Distribution Clerks and Workers	18,579	
	Telecom. Operators	5,704	850
	Others		122,625
Sales Workers	Tech., Salelsmen, Commercial Travellers and Manufactures' Agents	1,793	
	Salesmen, Shop Assistants and Related Workers	77,574	
Service Workers	Cooks, Waiters, Bartenders and Related Workers	30,656	
	Hairdressers, Barbers, Beauticians and Related Workers	25,928	
Agriculture	Farm Managers and Supervisors	5,015	
	Farmers, Agricultural and Animal Husbandry Workers	1,378,225	
	Forestry Workers		
	Fishermen, Hunter and Related Workers	4,178	
Production	Supervisors and Foreman	9,189	
	Miners, Quarrymen, Well Drillers and Related Workers	22,504	
	Metal Processors	27,509	
	Wood Preparation Workers, Paper Makers	17,145	
	Chemical Processors and Related Workers	9,761	
	Spinners, Weavers, Knitters, Dyers and Related Workers	213,804	
	Tanners, Fell-Mongers and Pelt Dressers	1,623	
	Food and Beverages Processors	44,755	
	Tailors, Dressmakers, Sewers		
	Upholsterers and Related Workers	62,910	3,280
	Shoesmakers and Leather Goods Makers	747,599	(27,073)
	Cabinet Makers and Related Wood Workers	19,428	
	Stonecutters, Carvers	7,753	
	Blacksmiths,tool Makers and M/C Tool Operators	94,741	13,990

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Pakistan Projected Additional Manpower Supply and Demand Selected Occupations, 1993-1998 (cont'd)

Major Occupational Groups	Selected Occupational Sub-Groups	1989-1993 Additional Demand	1989-1993 Supply from TEVT
	M/C Fitters, M/C Assemblers and Instrument Makers (except electrical)	116,524	25,255
	Electrical Fitters and Related Workers	39,693	35,700
	Broadcasting Station and Sound Equipment Operators, Cinema Projectionists	681	
	Plumbers, Welders, Sheet Metal and Structural Metal Preparers and Electros	24,274	19,270
	Jewelry and Precious Metal Workers	15,715	
	Class Formers, Potters and Related Workers	71,900	
	Rubber and Plastics Product Makers	6,504	
	Printers and Related Workers	18,580	
	Painters	32,837	330
	Bricklayers, Carpenters and Other Construction Workers	217,448	9,685
	Stationary Engine and Relate Equipment Operators	4,959	

Note: Figure in parentheses is the output of Women's GVIs. It is not known how many will seek employment.

Vocational Training Development Programme

1. National Vocational Training Project Phase II

The National Vocational Training Project Phase-II has been launched with the following aims:

a) to expand in a systematic manner training within industry;

b) to carry out training activities for rural/urban populations, and

c) to initiate training of women in non-traditional industrial trades.

The estimated cost of the Project is Rs. 2,041.353 million and it was approved by ECNEC in April 1987. The project is spread over a period of 8 years beginning from January 1987 to june 1995 and was launched w.e.f. 1st April 1987. the major components of this project are as under:

a) 31 new male vocational training centres in sub-urban areas;

b) 5 new women technical training centres;

c) Expansion of staff training facilities in 20 existing Technical Training Centres for new trades;

d) Expansion of training facilities in 20 existing Technical Training Centres for new trades;

e) Establishment of Management and Implementation Cells for male and female training programmes

A. Vocational Training Centres

31 new Vocational Training Centres will be located at the following sites;

Punjab (12 centres)	**Sind** (8 centres)
Attock	Sanghar
Chakwal	Tando Adam
Toba Tek Singh	Mirpur
Jaranwala	Khairpur Mirs
Okara	Umar Kot

Murree	Shikarpur
Muzaffargarh	Jacobabad
Main Channu	Noshero Feroze
Bhakkar	
Rajanpur	
Leiah	
Vehari	
N.W.F.P. (6 centres	**Baluchistan** (5 centres)
Abbottabad	Naushki
Hangu	Dera Murad Jamali
Karak	Mustung
Charsadda	Gawader
Temergarh (Dir)	Pishin
Chitrat	

B. Expanding the Training Capacity of Existing Centres

Additional equipment will be provided to 20 existing training centres (Punjab = 15, Sind = 3, NWFP = 1 and Baluchistan = 1) which will result in improvement of the quality of training and creation of extra training capacity of 1,844 places on double shift basis.

C. Apprenticeship Training

Under the present scheme, the apprenticeship training activities will be expanded and promoted having two fold aim, viz:-

a) to strengthen the Provincial Apprenticeship Services to ultimately become Training Development services; and

b) to shift the focus of activity relating to the enforcement of Apprenticeship Ordinance 1962, by providing a range of advisory services to the enterprises.

By the above measures, the Provincial Apprenticeship Services will be strengthened in the fields specified below:

a) Increasing the number of apprenticeship/training development officers;

b) Broadening the mandate of the services to include advisory functions on methods of establishing in-plant training programmes;

c) Training of existing apprenticeship/training development Officers and recruitment of new staff; and

d) Improve mobility by providing them adequate transport facilities.

This will result in increasing the capacity of apprenticeship training by 8,000 trainees per year.

D. Women Technical Training

Under the project, 5 Women Technical Training Centres (WTTC) will be established at the following places:

Sind	**Punjab**
Hyderabad	Rawalpindi
	Multan
N.W.F.P.	**Baluchistan**
Peshawar	Quetta*

* The centre has become operational in three trade areas viz; Dressmaking and designing, architectural drafting, Office/secretarial practice.

The programme will focus on development of training programmes for women in non-traditional areas in which wage employment is possible. This is a pilot and experimental project having a capacity for 840 trainees per year. The courses to be offered are as under:

- Office/Secretarial practice including Urdu and English Stenography
- Repair and service of household appliances including radio and T.V.
- Technical/Architectural Drafting
- Computer Operators
- Dressmaking and designing
- Photography/commercial illustrators
- Civil and Mechanical Drafting
- Hair and Skin Care

- Audio-Visual aids
- Embroidery and Knitting
- Computer data processing/maintenance.

E. Training Capacity under NTVP Phase-II

a)	New Centres		Annual Capacity
	Punjab	12 VTCs	2,400
	Sind	8 VTCs	1,600
	NWFP	6 VTCs	1,200
	Baluchistan	5 VTCs	1,000
			6,200
b)	Expansion in existing cemtres	20 existing centres	
c)	Women Training	5 WTTCs	840
			2,684
d)	Apprenticeship Training		8,000
		Total	16,884

F. Expansion of National Training Development Institute

The expansion of the National Training Development Institute has the following aims:

a) to provide training to instructors with a vew to improving their knowledge and skill so that they may impart better training.

b) to expand the output of qualified instructors, and

c) to upgrade the existing instructors in the National Vocational Training system.

Adequate training facilities are being developed at the Federal level for upgrading the skills of the in-service instructors. 150 instructors will be trained annually.

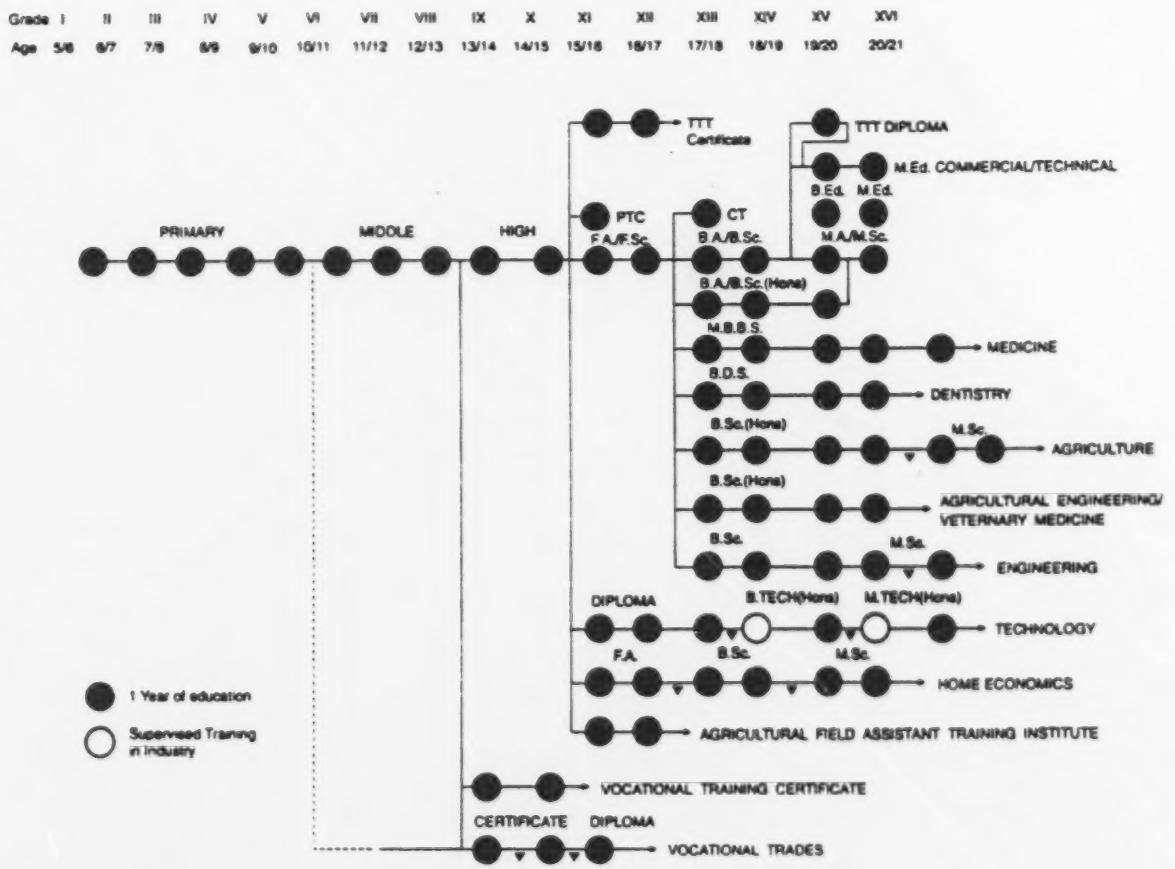
2. Establishment of Technical Training Centre at Larkana, Sind.

This project has been initiated in order to meet the demand of suburban areas of the Sind Province. This scheme is expected to cost Rs. 113.06 million.

The centre is under construction and on its completion, will have the facilities for training 192 trainees annually (operating on double shift basis) in the following trades:

- Tractor Mechanic
- Electrician
- Radio/T.V. Mechanic
- Turner
- Pipe Fitter

Structure of the Educational System (Formal Only)



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